Figure 1.

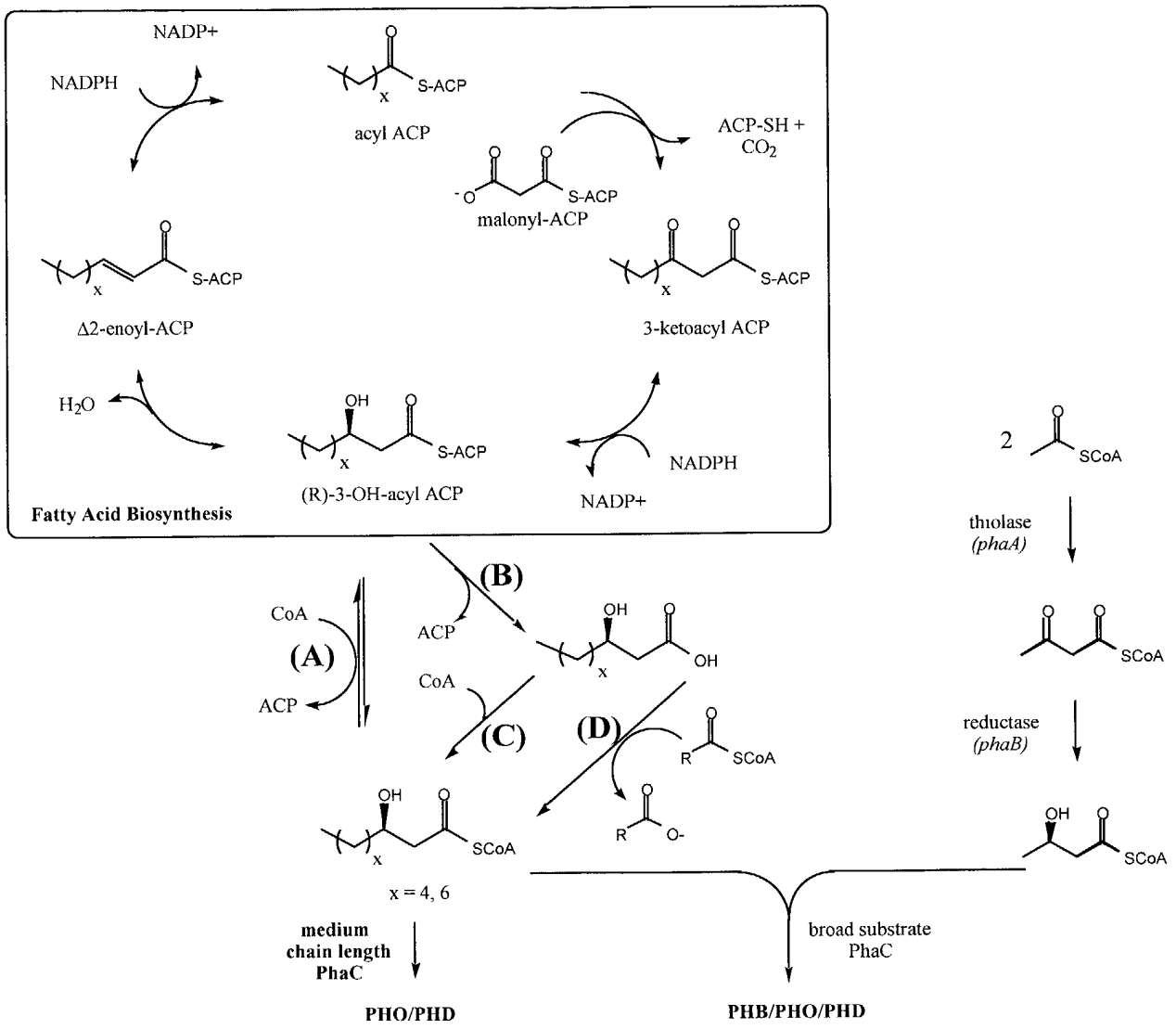
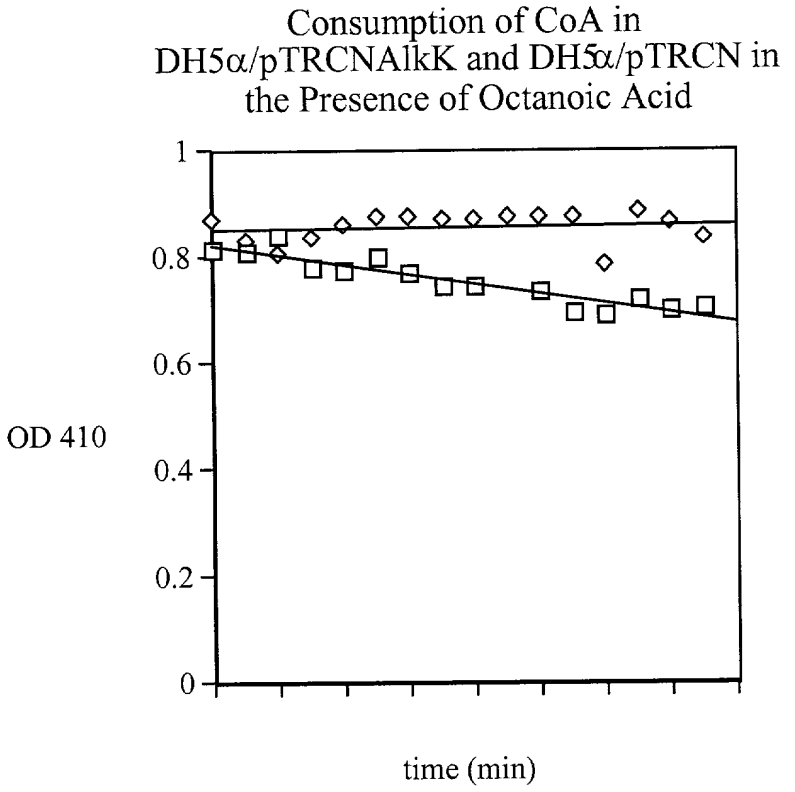

NADP+
NADPH
S-ACP
x
acyl ACP
ACP-SH + CO_2
S-ACP
malonyl-ACP
S-ACP
x
Δ2-enoyl-ACP
S-ACP
x
3-ketoacyl ACP
H_2O
OH
S-ACP
x
(R)-3-OH-acyl ACP
NADPH
NADP+
Fatty Acid Biosynthesis
2
SCoA
thiolase
(phaA)
SCoA
reductase
(phaB)
OH
SCoA
CoA
(A)
ACP
ACP
(B)
OH
OH
x
CoA
(C)
(D)
R
SCoA
R
O-
OH
SCoA
x
x = 4, 6
medium
chain length
PhaC
PHO/PHD
broad substrate
PhaC
PHB/PHO/PHD

Figure 2.



□ DH5α/pTRCNAlkK y = -0.018x + 0.819

◇ DH5α/pTRCN y = 0.001x + 0.847

Figure 3.

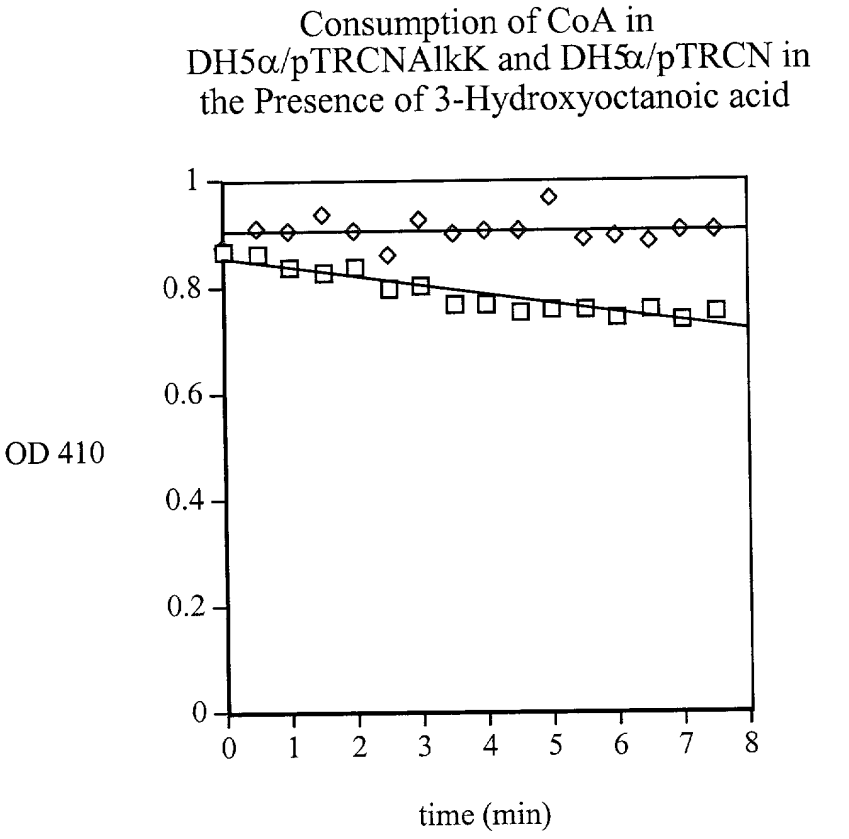

Consumption of CoA in
DH5α/pTRCNAlkK and DH5α/pTRCN in
the Presence of 3-Hydroxyoctanoic acid
OD 410
1
0.8
0.6
0.4
0.2
0
0 1 2 3 4 5 6 7 8
time (min)
DH5α/pTRCNAlkK y = -0.017x + 0.858
DH5α/pTRCN y = 0.000x + 0.905

Figure 4A

pCambia-Rbc.PhaG.PhaC

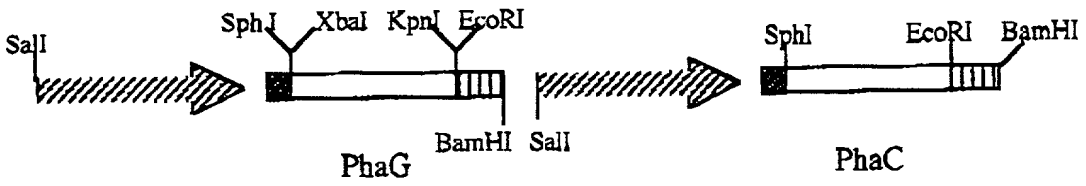
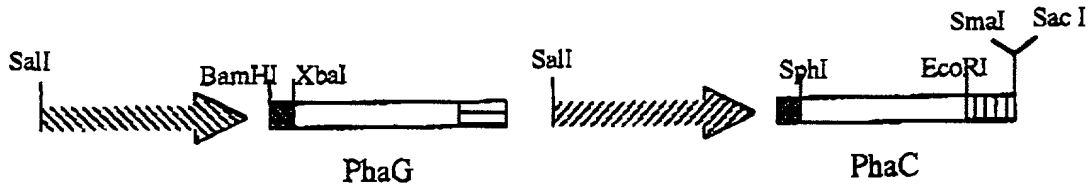


Figure 4B

pBI-C4PPDK.PhaG.Rbc.PhaC



rubisco promoter

C4PPDK promoter

Alfalfa targeting signal

Pea targeting signal

rubisco terminator

NOS terminator

Figure 5A. Chloroplast PHA Production

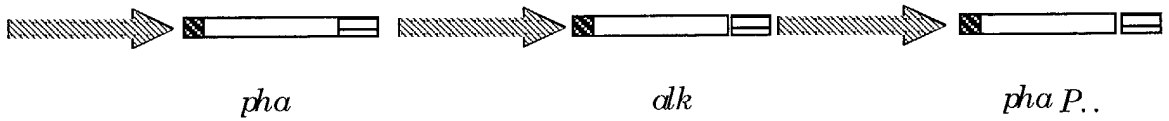


Figure 5B. Cytosolic PHA Production

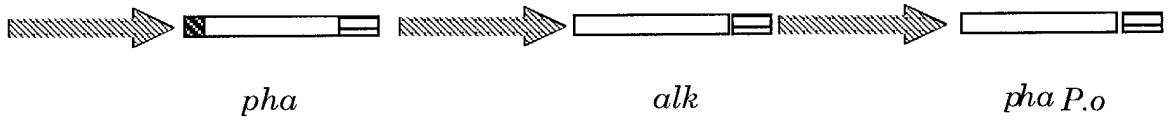
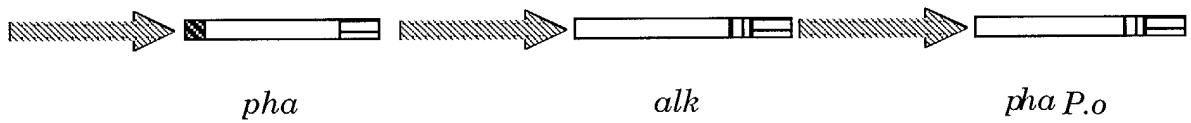


Figure 5C. Peroxisomal Production



Leaf-specific

Chloroplast

Peroxiso targeting

Polyadenyla

Figure 6A. Plastid PHA Production

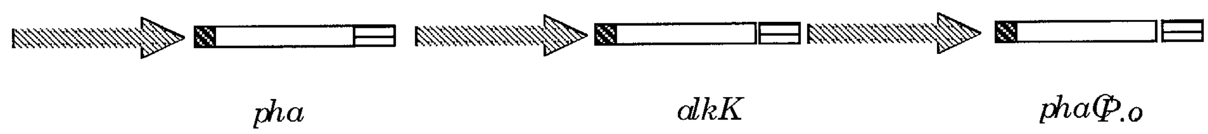


Figure 6B. Cytosolic PHA Production

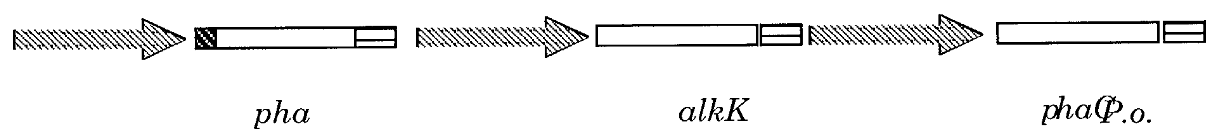


Figure 6C. Peroxisomal Production